

**ILLINOIS COMMERCE COMMISSION**

**DOCKET No. 16-\_\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**DAVID M. BAUGHER**

**Submitted On Behalf**

**Of**

**AMEREN TRANSMISSION COMPANY OF ILLINOIS**

**September 2, 2016**

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**I. INTRODUCTION**

**Q. Please state your name, address and current position.**

A. My name is David M. Baugher. My business address is 1901 Chouteau Ave., St. Louis, Missouri 63103. I am a Transmission Design Engineer in the Transmission Line Design group at Ameren Services Company (Ameren Services). Ameren Services provides various services to Ameren Transmission Company of Illinois (ATXI or the Company) and to other Ameren Corporation (Ameren) subsidiaries. Ameren Services, on behalf of ATXI, is responsible for designing the new 345 kilovolt (kV) electric transmission line running from Fargo (near Peoria, Illinois) to Galesburg, Illinois (the Spoon River Project or the Project).

**Q. Please summarize your educational background and professional experience.**

A. A summary of my educational background and professional experience is attached as an Appendix to my testimony.

**Q. What are your duties and responsibilities in your present position?**

A. My duties include designing transmission line projects for ATXI and other Ameren affiliates. I assist in selecting line routes that balance cost effectiveness and environmental impacts, ensuring that line design meets National Electrical Safety Code (NESC) requirements,

23 preparing baseline project cost estimates, managing project costs, and I serve as the technical  
24 lead in resolving any issues that arise during construction. While the scope of the transmission  
25 projects in which I am involved varies, each one includes the following elements: design of  
26 transmission line structures, selection of hardware, development of technical drawings,  
27 procurement of materials, scheduling of outages, and cooperation with other departments within  
28 Ameren Services, including real estate, vegetation management, environmental services and  
29 other engineering groups.

30 **II. PURPOSE AND SCOPE**

31 **Q. What is the purpose of your testimony in this case?**

32 A. The purpose of my testimony is to provide information regarding the route and schedule  
33 of construction for the Spoon River Project. Specifically, I explain why it is important from a  
34 scheduling standpoint that the Illinois Commerce Commission (Commission) authorize ATXI to  
35 exercise eminent domain authority to acquire certain properties along the approved route, where  
36 negotiation efforts for land rights have been unsuccessful (the Unsigned Properties). I also  
37 discuss ATXI's construction plan and schedule for the Project. ATXI witness Mr. Nelson also  
38 addresses the need for eminent domain authority for the Unsigned Properties, among other  
39 matters, in ATXI Exhibit 1.0.

40 **III. STATUS OF LINE DESIGN**

41 **Q. Can you generally describe the process referred to as "final line design"?**

42 A. During final line design, Ameren Services personnel identify a proposed location for each  
43 transmission structure, choose the type and size of each structure, and order all the necessary  
44 hardware. Choosing the right structures and the proper structure locations ensures that the

conductor will maintain the proper ground clearance required by the NESC. Choosing the proper hardware and insulators ensures that the line will operate safely and reliably.

**Q. What is the status of final line design for the Project?**

A. The final line design process for the Project is almost complete. ATXI anticipates that approximately 85% of the structures will be ordered by the end of the last quarter of 2016. The related line hardware material will also be ordered late in the last quarter of 2016. At this time, ATXI has performed 201 of the required 271 test borings. Test borings on the Unsigned Properties will be completed as soon as the necessary property rights can be acquired. These test borings are used to obtain information to help with foundation design.

#### **IV. PROJECT SCHEDULE**

**Q. What is the construction timeline for the Project?**

A. The anticipated in-service date for the Project is November 2018. Design and construction activities are on schedule to meet this in-service date. Foundation installation is anticipated to begin in January 2017. ATXI will begin installing structures and pulling conductors once enough consecutive foundations have been installed.

**Q. Generally, how long will it take to construct the Project?**

A. The Project is approximately 44.0 miles long. ATXI has scheduled approximately 15 months for construction. This construction timeline may vary, depending on the availability of construction crews.

**Q. How does the progress of land rights acquisition relate to the process of materials acquisition?**

66 A. Each structure must be individually designed to suit the terrain in the area where it will be  
67 installed, in order to meet NESC required clearances. Because the structures are individually  
68 designed with terrain in mind, each structure must be installed in the specific location for which  
69 it was designed. It can take up to 20 weeks for standard steel pole structures to be delivered to  
70 the job site, after they are ordered. Custom structures are specially designed for situations when  
71 a standard structure is not tall or strong enough and can take up to 26 weeks. Therefore, Ameren  
72 Services must design and order the structures as soon as practicable to stay on course with the  
73 proposed construction schedule.

74 **Q. Would failure to obtain all necessary land rights along the Project in a timely**  
75 **manner delay the construction schedule?**

76 A. Yes. Any delay in the acquisition of the Unsigned Properties may delay structure  
77 foundation design, which, in turn, may further delay or complicate construction. This could have  
78 substantial implications for the timely completion of the Project approved in Docket 14-0514.  
79 As explained by ATXI witness Mr. Nelson, if ATXI is unable to acquire the Unsigned Properties  
80 by negotiation, it may take approximately one year to complete an eminent domain proceeding in  
81 circuit court. Therefore, ATXI is requesting eminent domain authority now to allow time to  
82 complete the circuit court process and then complete construction consistent with the Project in-  
83 service date.

84 **Q. What are the consequences of a delay in the construction schedule for the Project?**

85 A. The Project is necessary to address transmission and reliability needs in an efficient and  
86 equitable manner, and promote the development of an effectively competitive electricity market,  
87 as found by the Commission in Docket 14-0514. Delay in completing the Project will delay the

benefits of the Project, including a more robust and reliable electric grid throughout the entire Project area.

**V. RIGHT-OF-WAY WIDTH**

**Q. What permanent easement width is required to construct the Spoon River Project where rights-of-way will be acquired?**

A. As explained in the direct testimony of ATXI witness Mr. Molitor in Docket 14-0514, a 150-foot wide permanent easement is generally required for long span construction to provide adequate clearance from the 345 kV transmission line conductors to the edge of the right-of-way for operational and maintenance purposes. In Docket 14-0514, the Commission authorized ATXI to acquire 150-foot wide easements. In addition to these permanent easements, the Commission also authorized ATXI to acquire construction easements, as necessary, of up to and including 150 feet in width.

**Q. Why is a 150-foot wide easement generally required for a 345 kV line?**

A. A 150-foot easement will provide adequate NESC clearances from the conductor to any buildings, trees or vegetation on the edge of the right-of-way (NESC Rule 234C.1). Maintenance of this clearance is necessary for safe operation of the line. Ameren Services has developed a document titled Transmission Vegetation Management Program FAC-003-2 in response to NERC mandates. This document specifies all the vegetation clearance requirements.

**Q. Will ATXI require construction easements to construct the Transmission Line?**

A. ATXI may require temporary construction easements of up to 150 feet, in addition to the 150-foot wide permanent easement. Temporary construction easements will be necessary in

109 limited circumstances where the construction contractor needs to set up equipment outside the  
110 150-foot wide permanent easement.

111 **Q. Does ATXI require other access rights outside of the easement area?**

112 A. In some circumstances, yes. ATXI needs access to the easement area in order to operate  
113 and maintain the line after it is constructed. If terrain or other factors make access over the  
114 permanent easement infeasible, ATXI may seek separate rights of access, including rights of  
115 ingress and egress across a landowner's property that allow ATXI personnel to reach the  
116 transmission line for repair or maintenance. ATXI may also require rights to access vegetation  
117 adjacent to the permanent easement area to ensure safe operation of the line.

118 **VI. CONCLUSION**

119 **Q. Does this conclude your direct testimony?**

120 A. Yes, it does.



**APPENDIX**

**STATEMENT OF QUALIFICATIONS  
DAVID M. BAUGHER**

I received a Bachelor of Science degree in Civil Engineering from the University of Missouri at Rolla (Missouri University of Science and Technology) in 2007. I also received a Master of Science degree in Structural Engineering from Southern Illinois University at Edwardsville in 2012. I passed the Professional Engineering exam in 2013 and am licensed in the states of Missouri and Illinois. I worked as a Structural Engineer between 2008 and 2013 with different design consulting firms working on industrial and commercial buildings and structures. I began work as a Transmission Line Design Engineer at Ameren in 2013. My responsibilities as a line design engineer at Ameren include but are not limited to; 100 kV transmission lines and above, routing new lines, designing new and modifying existing structures to adequately support wire loads and meet minimum NERC clearances, develop construction specifications, size structure hardware for adequate capacity, develop drawings and construction packages, order material, help develop project schedules, manage project cost, support contractors and construction supervisors during construction, perform final inspections before energizing lines, and verify proper wire installation following construction. Projects that I have worked on as a line design engineer include routing and sequencing transmission lines into newly built substations, and rebuilding and modifying an existing line to raise the electrical capacity and eliminate NERC clearance violations. I am currently involved in developing and improving a quality assurance/quality control (QA/QC) plan for transmission line design calculations and documents. The outcome of the group is to reduce or eliminate errors in calculations, drawings, and material orders prior to the start of construction which can affect the schedule and performance of the transmission line.